

Paediatric subspecialties in Belgium: past, present, and future

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Abstract

Objective: As paediatrics is a constantly evolving specialty, the interest in subspecialties has increased over the last decades. However, for a long time, only three paediatric subspecialties had official recognition criteria in Belgium (haematology and oncology, neurology, and neonatology) and recently infectiology was added to the shortlist. Importantly, the number of recognized subspecialties is varying between European countries. With this study, we aim to provide insights into the preferences of future paediatricians, especially on subspecialisation.

Methods: Between October 1st, 2021, and December 6th, 2021, the youth representatives of the Flemish Society of Paediatrics (Jong VVK) conducted a comprehensive survey on professional preferences among paediatric trainees and recently graduated paediatricians in Belgium. The survey included 34 questions and statements with an emphasis on subspecialisation and (future) work perspectives. The answers were compared with data from similar surveys in other countries.

Results: The survey was completed by 287 respondents. This survey was the first to include data from all universities in Belgium. In line with previous surveys among Flemish trainees, 80% of the respondents indicated wanting to subspecialize or having subspecialized and only 1% preferred working exclusively in private practice. The three most preferred subspecialties were neonatology, pulmonology, and infectiology. Interestingly, for two out of three respondents, the presence of official recognition criteria would affect their ambition to subspecialise.

Interpretation: Our unique dataset provides valuable insights into the future preferences of young paediatricians in Belgium. To optimize the career flow of the next generation of paediatricians, better structuring of subspecialties is warranted.

Introduction

Children are not miniature adults and a holistic approach is needed when treating paediatric patients. The higher survival rate of paediatric patients with severe and/or chronic conditions has led to an increasing prevalence of medically complex children (1, 2). Consequently, the paediatric workforce has been evolving towards more (sub)specialized medicine. Fellowships, i.e. additional training to become specialized in one or more subspecialties, are becoming increasingly important to support this evolution. Up until 2021, only three subspecialties had specific subspecialty criteria and were recognized by the Belgian government: neonatology, paediatric neurology, and paediatric haematology-oncology (3). Recently, infectiology was added to the shortlist, setting the final count of recognized subspecialties in Belgium on four subspecialties. In 2013, a mini-questionnaire among 46 different paediatric societies in Europe revealed the number of recognized subspecialties to vary from 0 to 20 in the 29 responding countries, of which 11 countries declared to recognize more than 10 different subspecialties (4). The approved syllabi for paediatric subspecialty training by the European Board of Paediatrics (EBP) provide guidelines for multiple subspecialties but not for all, and they are not yet associated with official recognition (5). These data demonstrate the lack of standardised and harmonised paediatric subspecialty recognition criteria in Belgium and Europe, with an impact on international mobility and collaboration.

Paediatric subspecialty criteria have been developed over time to standardise certain subspecialties within the field of paediatrics. These criteria allow paediatricians with expertise in a paediatric subspecialty to attract and treat patients with specific conditions, optimising patient care. Without these criteria, specialised paediatricians are unable to valorise their expertise. However,

few studies have focused on the financial outcome of general versus subspecialised paediatricians. A study in 2011 in Atlanta (Georgia, USA) demonstrated that the financial returns of paediatric fellowship training varied greatly depending on which subspecialty fellowship was chosen. Pursuing a fellowship in most paediatric subspecialties was a negative financial decision when compared with practicing as a general paediatrician (6). Similar Belgian or European analyses are lacking in the current literature. The reasons for subspecialising are also very variable and differ from one country to another (7, 8).

To shape and standardise fellowships in Belgium and Europe, knowledge of the current profile and future expectations of paediatric trainees and young paediatricians is mandatory. In 2012 and 2015, youth representatives of the Flemish Society of Paediatrics (Jong VVK) surveyed their fellow paediatric trainees to map their profile and expectations (9). However, these surveys had some limitations. First, they were limited to the Flemish universities which complicated conclusions on a national level. Second, all respondents were paediatricians in training, lacking retrospective opinions of recently graduated paediatricians. Third, the emphasis of these surveys was on workload and future work conditions, rather than subspecialties and their recognition criteria. Therefore, in this context, we initiated a first national survey among paediatric trainees and recently graduated paediatricians of all Belgian universities about subspecialisation and future work preferences.

Methods

The survey was drafted by youth representatives of the Flemish Society of Paediatrics (Jong VVK). The content of the questions was based on previous surveys, as conducted in 2012 and 2015 (9), with the addition of

questions concerning paediatric subspecialisation. Questions were drafted after multiple internal review rounds and only approved by universal consensus. The survey was distributed electronically among all university and regional hospitals in Belgium. After the first version in Dutch, the survey was translated to French by a native speaker for distribution among all French-speaking universities. The filling-in period was from October 1st, 2021, to December 6th, 2021, and all replies were submitted electronically and anonymously.

The survey comprised 25 questions, of which 23 were multiple-choice questions, and 9 statements with 5 possible answers: *completely agree*, *agree*, *neutral*, *disagree*, and *completely disagree*. Apart from demographic questions, the emphasis was placed on subspecialisation and (future) work perspectives. After collecting all the results, sub-analyses were performed to compare Flemish respondents with French-speaking respondents, males with females, and universities. Statistics were performed using the Chi-Square with Benjamini Hochberg correction for multiple testing. The significance level for comparison analyses was set at a p-value of <0.05.

Results

General

The survey was completed by 287 respondents, of which almost 60% were trainees (see Figure 1). The average age of all respondents was 29.3 years old, and the majority were female (82.2%). All demographic characteristics are displayed in Table 1. Importantly, this survey was the first to include data from all universities in Belgium with a representative spread over the 7 different universities, besides a relative underrepresentation of Vrije Universiteit Brussels, KU Leuven, and Université de Liège.

Subspecialisation

Four out of 5 respondents (79.8%) indicated wanting to subspecialize or having subspecialized. The subspecialty preferences are shown in Figure 2. The 3 most preferred subspecialties were neonatology (15%), pulmo-

nology (12.9%), and infectiology (11.8%), with 43 respondents (15.0%) not yet knowing which subspecialty they want to acquire. Males prefer to subspecialise more when compared to females (92.0% vs 77.1%, $p=0,017$). 'Interest in the field' was repeatedly (75.6%) declared as the primary motivation for subspecialisation. Interestingly, 41.5% of all respondents aspiring to subspecialise (95/229) prefer to do this at another university (domestic or foreign), while only 1 out of 3 (31.4%) respondents who have already applied for a fellowship, applied to an external department. Flemish-speaking trainees prefer a fellowship at their own university, in contrast to French-speaking trainees who prefer a foreign or other domestic universities (64.2% vs 39.2%, $p<0,001$). Noteworthy, 57.5% of all respondents (165/287) were not aware of all available fellowship positions, and 45.2% of all fourth- to seventh-year paediatric trainees (33/73) indicated they aspired to a fellowship, but lacked confirmation due to scarcity or absence of fellowship positions. Large majorities indicated a central overview of available fellowships would be very useful (93.7%) and a separate statute for fellows is mandatory (85.4%). For 2 out of 3 respondents (62.7%), the presence of subspecialty criteria would affect or has affected their ambition to subspecialise. Strikingly, 71.4% of all respondents would agree to a general training of 4 years, followed by a (mandatory) subspecialty training of 2 years, while only 13.9% would disagree.

Future

Next, we analysed future work expectations and preferences (Table 2); 65.5% preferred to work exclusively in a hospital, and only 2.4% in private practice. About one quarter (26.8%) still wants to combine their hospital activity with a private practice. Interestingly, an equal number (28.2%) of respondents wanted to work academically and regionally, and 58 respondents (20.2%) declared that subspecialising was or is needed for a future workplace. Half (51.7%) of these 58 respondents wanted to work academically, and only 10 (17.2%) of them regionally. One out of four (26.8%) respondents declared (wanting) to be self-employed, while 30.7% do not know yet. Moreover, 42.7% of the 199 paediatric trainees

Figure 1: Slice chart of the distribution in training of all respondents (n = 287).

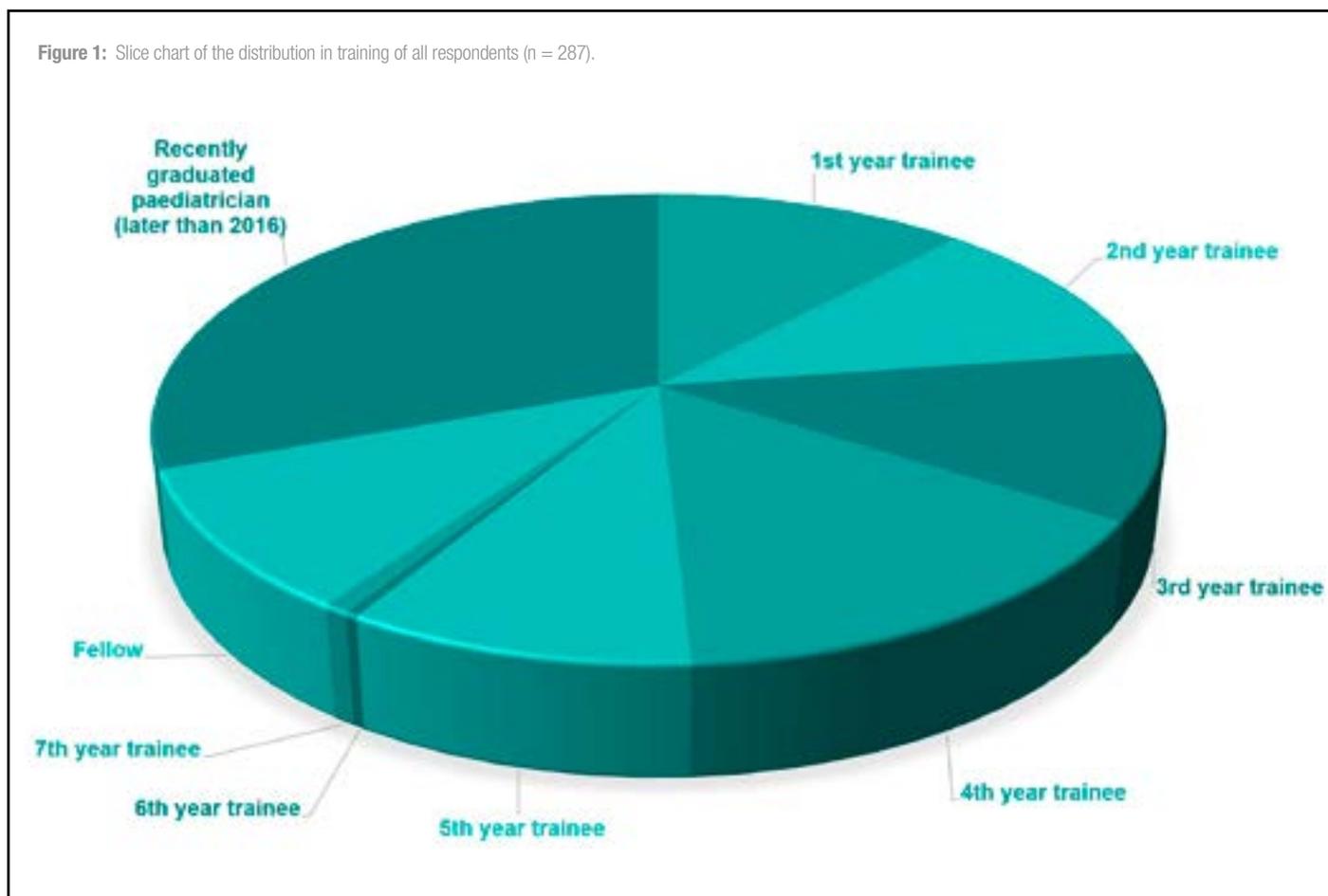


Table 1: Demographic characteristics of all respondents (n = 287) with number, percentage or mean, and response rate.

Characteristics	N	%	Mean	Response rate
Age	287		29.3y	
Gender				
Female	236	82.2		
Male	50	17.4		
Other	1	0.3		
Marital Status				
Married	85	29.6		
In a relationship	143	50.0		
Single	57	20.0		
Other	2	0.7		
Function				
Paediatric trainee	171	59.6		
In training for subspecialty/fellow	28	9.8		
Working as general paediatrician or subspecialist	88	30.7		
Geography				
Flemish/Dutch-speaking university	153	53.3		
Antwerp University	42	14.6		41.2%
Vrije Universiteit Brussels	25	8.7		25.3%
Ghent University	55	19.2		49.1%
KU Leuven	31	10.8		24.4%
French-speaking university	134	46.7		
Université libre de Bruxelles	48	16.7		43.6%
Université de Liège	28	9.7		25.7%
Université catholique de Louvain	58	20.2		50.4%

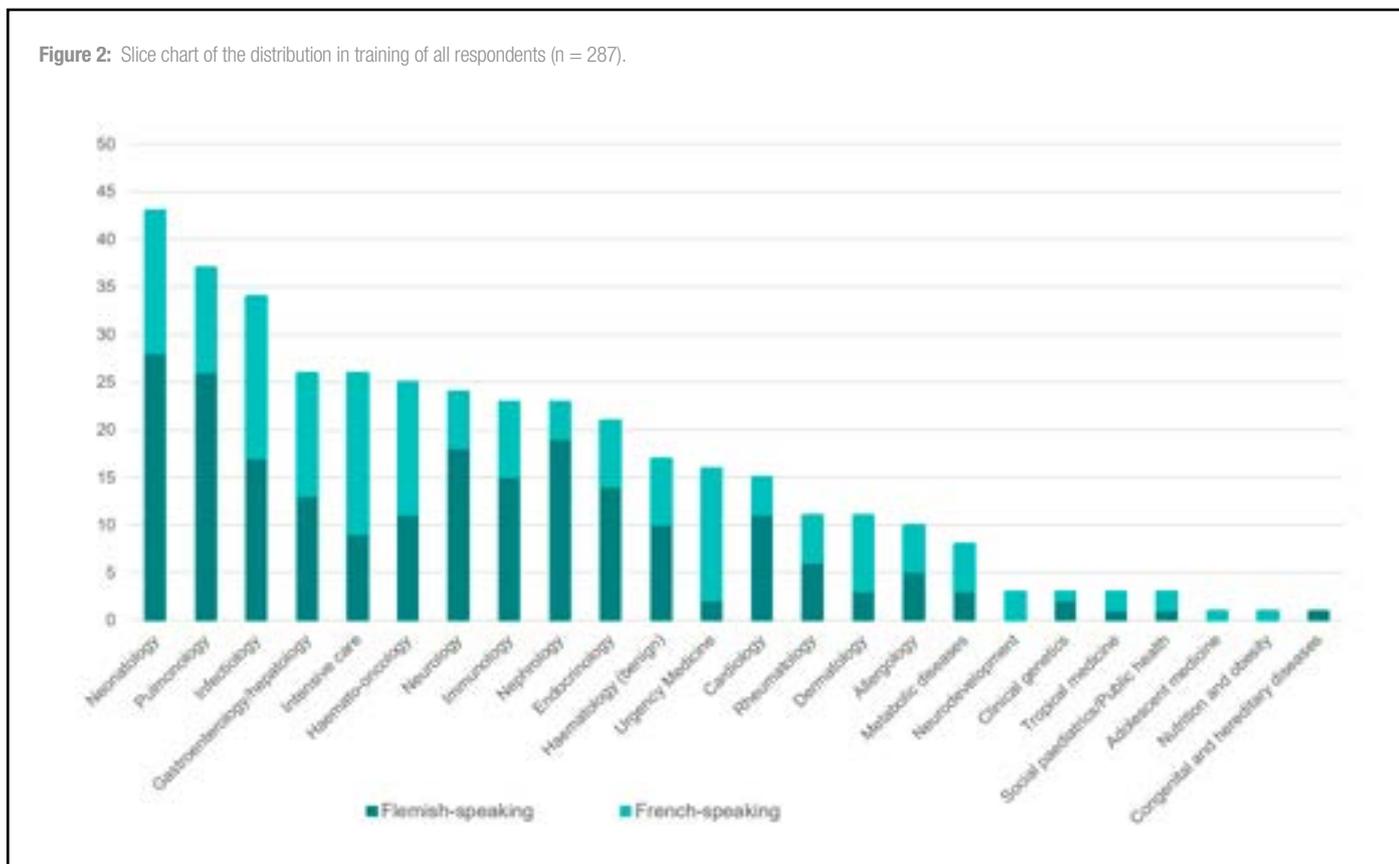
Table 2: Future work environment preferences of all respondents (n = 287) with number and percentage.

Future work environment	N	%
Hospital vs private practice		
Hospital	188	65.5
Private practice	7	2.4
Combination	77	26.8
Not (yet) known	15	5.2
Academic vs regional		
Academic	81	28.2
Regional	81	28.2
Combination	74	25.8
Not (yet) known	51	17.8
Statute		
Self-employed	77	26.8
Employee	67	23.3
Combination	55	19.2
Not (yet) known	88	30.7
Need for subspecialty		
Yes	58	20.2
No, but strongly recommended	57	19.9
No, not needed	51	17.8
Not (yet) known	121	42.2

Table 3: Timing of confirmation of a future workplace after graduation for all 5th to 7th year trainees, fellows, and recently graduated paediatricians (n = 146) with number and percentage.

Timing of confirmation	N	%
1 st year	3	2.1
2 nd year	2	1.4
3 rd year	12	8.2
4 th year	11	7.5
5 th year	42	28.8
6 th year	15	10.3
7 th year	7	4.8
No confirmation yet	54	36.9

Figure 2: Slice chart of the distribution in training of all respondents (n = 287).



and fellows have not yet decided under which statute they want to work in the future. Flemish-speaking trainees and recently graduated paediatricians clearly prefer to work exclusively in a hospital or the combination, when compared to French-speaking trainees or recently graduated paediatricians (77.1% vs 52.2%, $p < 0.001$). The timing of confirmation of a future workplace for all fifth- to seventh-year trainees, fellows and recently graduated paediatricians is displayed in Table 3. Critically, two out of three fifth- to seventh-year trainees and fellows (38/58) have no confirmation of a future workplace yet, among which 18 of the 28 fellows (64.3%). Additionally, 18.2% of all recently graduated paediatricians (16/88) had no workplace upon graduation.

Discussion

Paediatrics is a constantly evolving specialty, which warrants evaluating its progress over time. As more specialized care for paediatric patients is mandatory, paediatric subspecialties have increasingly gained interest over the last decades. However, few subspecialties in Belgium have official recognition criteria and a national framework to mitigate the transition from a paediatric trainee to a fellow or graduated paediatrician with a subspecialty degree is incomplete.

This survey was the first to comprise input from all paediatric trainees and recently graduated paediatricians about subspecialisation and future work perspectives on a national level. Importantly, almost 80% of all respondents indicated wanting to subspecialize or having subspecialized, confirming an increased interest in subspecialty of paediatric trainees and young paediatricians, when compared with previous surveys in 2012 and 2015 (42% and 62%, respectively) (9). In contrast, the estimated need for subspecialized paediatricians is lower, suggesting that data concerning the available subspecialist positions and the actual needs are absent. 'Interest in the field' was indicated as the most important factor for wanting to subspecialize, which is in line with previous American surveys among paediatric trainees (7). As infectious diseases is the third most wanted subspecialty, it is worth mentioning that this survey was conducted during the Covid-19 pandemic, possibly influencing the preferences of the respondents. Importantly, subspecialties such as

social paediatrics, obesity and nutrition, and adolescent medicine seem to lack interest among the young generation of paediatricians. However, the implication of more paediatricians in those fields may have a major impact on the disease burden in adults in the long run.

As more than half of the respondents are not aware of all available fellowship positions, a central overview of available fellowships may be needed to facilitate the flow from trainee to fellow. In fact, 4 out of 9 fourth- to seventh-year paediatric trainees aspire to a fellowship, but declare that there is a scarcity or absence of fellowship positions. A substantial part of the respondents aspiring to a fellowship (41.5%) prefers to do this at another university, whether domestic or foreign. Nevertheless, only a smaller number of trainees is likely to apply to an external department. To fulfil the need for foreign fellowships and enhance international mobility, a central overview of all European fellowship positions and shared uniform recognition criteria may be very useful.

Nearly 3 out of 4 respondents (71.4%) indicated they would agree to a general paediatric training (*truncus communis*) of 4 years, pursued by a subspecialty training of 2 years. This would be similar to the training structure of internal medicine in Belgium, but also to the curriculum in The Netherlands for example. Whether or not these 2 years of subsequent subspecialty training would be mandatory, including for those pursuing a career in general paediatrics, remains to be elucidated. In any case, an organized structure may lead to a better flow and facilitate the recognition of all paediatric subspecialties, possibly including general paediatrics.

Official recognition criteria for subspecialties are highly needed, as the decision of whether or not to subspecialize depends or has depended on these criteria for 62% of all respondents. In the previous surveys, 84% of all respondents already acknowledged that recognition criteria for subspecialties are highly required (9). Furthermore, a special statute for fellows is expressed by the majority as very desirable. When comparing the statute of fellows in Belgium is compared to the statute in The Netherlands for example, considerable differences in terms of salary, education, workload, and more importantly recognition, are found. This again highlights the fact that there is a pivotal need for recognition criteria of

subspecialties, not only in Belgium but even more so in Europe. Nevertheless, a distinction should be made between paediatricians aspiring for additional training to expand their knowledge as general paediatricians and paediatricians aspiring for an academic career planning to treat almost exclusively patients in their subspecialty. At the moment, they both follow the same fellowship, although their future goals and perspectives are different. Keeping these differences in mind, an international consensus about the recognition criteria of subspecialties will be the keystone to streamlining subspecialty training and facilitating the career flow of all paediatric trainees in Belgium and in Europe.

The majority of respondents indicated wanting to work exclusively in a hospital, while 1 out of 4 (26.8%) prefer a combination of hospital care with private practice. In previous surveys among Flemish paediatric trainees, the percentage of trainees preferring to combine part-time hospital care with private practice differed from 63% in 2012 to 79% in 2015, with a decline in the importance of working in private practice. Comparing these numbers with the results of this national survey, we can see a shift in preferred future work environments towards hospital care instead of private practices. Working exclusively in private practice was only indicated by 7 French-speaking paediatric trainees (2.4%), while Flemish trainees still refrain from it (0%) (9). Noteworthy, the number of respondents who want to work academically was the same as the number wanting to work in a regional hospital. Moreover, subspecialising was needed or strongly recommended in view of a future workplace for 2 out of 5 respondents, emphasizing the urge for streamlined fellowship programs. Strikingly, more than three-quarters of the fourth- to seventh-year trainees and fellows lack confirmation of a future workplace, highlighting the need for an enhanced flow to and after graduation.

Limitations

Although this study revealed valuable data on the profile and (future) preferences of paediatric trainees, fellows, and young paediatricians in Belgium, there are also some limitations. First, this survey was only open for a short period (2 months) and not distributed equally by the different universities, possibly missing out on a higher response rate. Second, the survey was conducted solely by youth representatives of the Flemish Society of Paediatrics (Jong VVK) and not reviewed beforehand by external paediatricians or internship supervisors, which could have led to biased questions and/or statements. In addition, locoregional differences may explain some of the heterogeneity of the data set as well as limit its external validity. Consequently, conclusions should not be simply extrapolated and additional studies are warranted to map these findings on a European level. Third, detailed financial analyses of fellowships or working as a subspecialised paediatrician versus working as a general paediatrician in Belgium are lacking. Subsequent studies on the financial impact of career choices in paediatrics in Belgium and in Europe are needed.

Conclusion

This unique dataset provides valuable insights into the desires and needs of the future generation of paediatricians in Belgium. Additional studies about this topic on a European level are needed. Better structuring of fellowships and subspecialties is warranted to enhance the transition from training to graduation and optimize the career flow of future paediatricians in Belgium and Europe.

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Conflicts of interest

All authors have no financial or non-financial interests to disclose.

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